CLAIMS

What is claimed is:

1. An apparatus for communicating data content to a remote device, comprising:

a power-line communication (PLC) module configured for connection to a power line;

a PLC receiver associated with said PLC module;

said PLC receiver configured to receive data content from a content server over a PLC network; and

an ultra-wide band (UWB) wireless transmitter associated with said PLC module;

said UWB wireless transmitter configured to transmit data content received by said PLC receiver for receipt by a UWB wireless receiver associated with a remote device.

2. An apparatus as recited in claim 1, wherein said PLC receiver is configured to detect unit addressing associated with commands and/or data content communicated over said PLC network.

3. An apparatus as recited in claim 2, wherein said PLC receiver is configured to ignore commands when said associated unit addressing is not directed to said PLC receiver.

4. An apparatus as recited in claim 1, further comprising means for decryption of content data received by said PLC module over said PLC network.

5. An apparatus as recited in claim 1, further comprising:

a PLC transmitter coupled to said PLC receiver;

said PLC transmitter configured to enable two-way communication over said PLC network; and

a UWB wireless receiver coupled to said UWB wireless transmitter and

configured for receiving data content from a remote device having a UWB wireless transmitter;

whereby data content can be received from the remote device and communicated over said PLC network to the content server.

6. An apparatus as recited in claim 5, wherein said PLC transmitter is configured to encode its unit address when transmitting requests over said PLC network.

7. An apparatus as recited in claim 5, further comprising means for communicating said data content over an allocated portion of the bandwidth of said PLC network.

8. An apparatus as recited in claim 7, wherein said means for communicating said data content over an allocated portion of said power-line bandwidth, comprises:

a computer processor; and

programming executable by said computer processor for carrying out the operations of

registering a bandwidth allocation from a bus master which is connected to said PLC network, and

limiting the transmitting and receiving of said content data to said bandwidth allocation.

9. An apparatus as recited in claim 8, wherein said bandwidth allocation is received from a content server connected to said PLC network and operating in a bus master mode to communicate bandwidth assignments to said PLC module.

10. An apparatus as recited in claim 9, wherein said bandwidth assignments are determined in response to bandwidth requests generated by said PLC module.

11. An apparatus as recited in claim 9, wherein said bandwidth assignments comprise time slots.

12. A system for providing local area wireless communications, comprising:

a content server having power-line communication (PLC) network connectivity;

a device communications module;

a PLC interface associated with said device communications module;

said PLC interface configured for communicating data content over said PLC network with said content server; and

an ultra-wide band (UWB) wireless communication interface associated with said device communications module;

said UWB wireless communication interface configured for communicating data content between said PLC interface and a remote device having UWB wireless connectivity.

13. A system as recited in claim 12, wherein said content server and said device communications modules include means for unit addressing of said device communications modules within said PLC network.

14. A system as recited in claim 13, wherein said unit addressing comprises unit address information for a destination unit or unit address information from a source unit.

15. A system as recited in claim 13, wherein said means for unit addressing is configured to enable communication within a specific portion of the bandwidth allocated to a given device communication module.

16. A system as recited in claim 12, wherein said content server is configured for recording content received over said PLC network.

17. A system as recited in claim 12, wherein said content server is configured for transmitting content played from a storage media over said PLC network.

18. A system as recited in claim 12:

wherein said content server is configured to operate in a bus master mode when a bus master is not available on said PLC network;

further comprising means for allocating bandwidth to devices communicating over said PLC network when said content server operates in said bus master mode.

19. A system as recited in claim 18, wherein said content server operating in a bus master mode comprises:

a computer processor; and

programming executable on said computer processor for carrying out the operations of

dividing the available bandwidth of the physical power-line communication network into assignable units,

categorizing content streams that are to be communicated over the physical power-line communication network into priority groups,

assigning units of bandwidth to said priority groups in response to the bandwidth requirements of said content streams and the transmission priority of said priority group, and

assigning specific units of bandwidth to specific content streams within each of said priority groups in response to an equitable sharing of bandwidth on said physical power-line communications network.

20. A system as recited in claim 19, wherein said bandwidth within a given priority group is assigned by said content server operating in said bus master mode on an as-needed basis to device communications modules utilizing up to their equal share of bandwidth within said given priority group, with additional available bandwidth being equally divided between virtual networks with unfulfilled bandwidth

requests.

21. A system as recited in claim 12, further comprising means associated with said device communications module for communicating over said PLC network within an allocated bandwidth.

22. A system as recited in claim 21, wherein said means for communicating within said allocated bandwidth comprises an allocation control circuit associated with said device communications module which is configured to communicate data content only within bandwidth portions allocated by a bus master configured for allocating bandwidth portions to said device communications module.

23. A system as recited in claim 22:

wherein said allocation control circuit is configured to request bandwidth from said bus master; and

wherein said allocation control circuit is configured to utilize bandwidth portions for communicating data streams an dictated by said bus master.

24. A system as recited in claim 23, wherein said bandwidth request from said allocation control circuit is transmitted to said bus master prior to said device communications module transmitting data content over said PLC network.

25. A system as recited in claim 12, wherein said PLC interface is configured for encrypting data content transmitted over said PLC network and decrypting data content received over said PLC network.

26. A method of communicating data content streams between a content server and a remote wireless device, comprising:

connecting a power-line communications (PLC) to ultra-wide band (UWB) wireless communications module to a PLC network;

said module configured to convert data content streams received from a UWB

wireless remote device to a data content stream on said PLC network;

said module further configured to convert data content streams received from a content server over said PLC network to a UWB transmission to a UWB wireless remote device;

(b) allocating bandwidth upon said PLC network connected between said content server and said PLC to UWB wireless communications module within which said data content streams are to be transmitted; and

(c) communicating said data content stream between said content server and said remote wireless device with the data content being converted within said PLC to UWB wireless communications module.

27. A method as recited in claim 26, wherein said allocating of bandwidth comprises assigning time slots for the communication of said data content streams.

28. A method as recited in claim 26, wherein said allocating of bandwidth is performed by a content server operating as a bus master for the physical PLC network and allocating bandwidth for the transmission of data content within the virtual networks of said physical PLC network.

29. A method as recited in claim 28, wherein said PLC to UWB wireless communications module requests bandwidth from said bus master prior to transmitting a content stream received from said remote UWB wireless device over said PLC network.

30. A method as recited in claim 28, wherein said bus master allocates bandwidth to said PLC to UWB communications module prior to transmitting a content stream to said module.

31. A method as recited in claim 26, further comprising encrypting transmissions over said PLC network.